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**JUL 01 2005****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application: Drogou et al.	)	Group Art Unit: 1772
	)	
Serial No. 10/053,497	)	Examiner: Patterson Marc A.
	)	
Filed: November 9, 2001	)	Atty. Docket No. 1974.PKG
	)	

For: ADHESIVE FOR DIFFICULT TO BOND SUBSTRATES

**BRIEF ON APPEAL**Commissioner for Patents  
Alexandria, VA 22313-1450

Sir:

Applicants hereby appeal the decision of the Primary Examiner finally rejecting claims 1-8 and 21-32, all pending claims. A timely Notice of Appeal was filed February 1, 2005. A three (3) month extension of time, extending the period for filing this brief until July 1, 2005 is being concurrently filed herewith

The fee, as required under 37 C.F.R. § 41.20 (b) (2), accompanies the filing of this Brief (fee transmittal form attached).

A copy of the claims involved in this appeal is set forth in the *Claims appendix*.

**I. Real party in interest**

The real party in interest is National Starch and Chemical Investment Holding Corporation.

## *II. Related appeals and interferences*

There are no other appeals or interferences known to applicants which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## *III. Status of claims*

Claims 9-20 have been canceled.

Claims 1-8 and 21-32 are pending.

Claims 1, 3, 21 and 30-32 stand finally rejected under 35 U.S.C 103 (a) as being unpatentable over Yang et al. (U.S. Patent No. 6,207,248).

Claims 2 and 22 are rejected under 35 U.S.C 103 (a) as being unpatentable over Yang et al. (U.S. Patent No. 6,207,248) in view of Milks (U.S. Patent No. 5,401,791).

## *IV. Status of amendments*

All amendments have been entered.

## *V. Summary of invention*

The invention is directed the use of an adhesive for bonding together difficult to bond substrates, in particular varnished or grease resistant substrates. Applicants have discovered an improved process for bonding difficult-to-bond substrates, i.e., substrates having a surface energy

less than about 38 dyn/cm and down to about 25 dyn/cm. The claimed process comprises bonding a first substrate to a second substrate with a hot melt adhesive comprising an ethylene n-butyl acrylate copolymer and a modified terpene tackifier. Preferred modified terpenes for use in the practice of the invention are terpene phenolics. The adhesive compositions of the invention will also preferably comprise a wax.

*VI. Grounds of rejection to be reviewed in appeal*

- A. WHETHER THE SUBJECT MATTER OF CLAIMS 1, 3, 21 AND 30-32 ARE OBVIOUS OVER YANG ET AL. (U.S. PATENT NO. 6,207,248).
- B. WHETHER THE SUBJECT MATTER OF CLAIMS 2 AND 22 ARE OBVIOUS OVER YANG ET AL. (U.S. PATENT NO. 6,207,248) IN VIEW OF MILKS (U.S. PATENT NO. 5,401,791).
- C. WHETHER THE SUBJECT MATTER OF CLAIMS 4, 5, 23 AND 24 ARE OBVIOUS OVER YANG ET AL. (U.S. PATENT NO. 6,207,248) IN VIEW OF DUPONT ET AL. (U.S. PATENT NO. 5,325,781).
- D. WHETHER THE SUBJECT MATTER OF CLAIMS 6-8 AND 25-27 ARE OBVIOUS OVER YANG ET AL. (U.S. PATENT NO. 6,207,248) IN VIEW OF HOWELLS ET AL. (U.S. PATENT NO. 4,566,981).
- E. WHETHER THE SUBJECT MATTER OF CLAIMS 28 AND 29 ARE OBVIOUS OVER YANG ET AL. (U.S. PATENT NO. 6,207,248) IN VIEW OF BRUBER ET AL. (U.S. PATENT NO. 5,475,080).

*VIII. Argument*

- A. Claims 1, 3, 21 and 30 are not obvious over Yang et al.

Claims 1, 3, 21 and 30-32 are rejected under 35 U.S.C 103 (a) as being unpatentable over

Yang et al. (U.S. Patent No. 6,207,248).

Yang discloses reactive hot melt polyurethane adhesives. In contrast to hot melt adhesives that can be repeatedly heated from its solid state and flowed to a liquid form, reactive hot melt adhesives, also referred to in the art as polyurethane hot melt adhesives, contain isocyanate terminated prepolymers that react with surface or ambient moisture in order to chain-extend forming a new polyurethane polymer. Reactive hot melt adhesives go through an irreversible chemical reaction once dispensed in the presence of ambient moisture. While the reactive hot melts of Yang may contain additives such as tackifying resins and thermoplastic polymers, the additives are still reactive polyurethane hot melt adhesives and thus contain a polyfunctional isocyanate component and a polymer polyol component. Yang does not disclose or suggest a hot melt adhesive that is not a reactive polyurethane hot melt. Applicants' claimed invention does not encompass reactive hot melts and do not contain polyurethane components.

Claim 1 recites that the adhesive is a thermoplastic adhesive. A thermoplastic adhesive is not a reactive hot melt. Claims 21 and 30 requires that the hot melt adhesive consist essentially of the recited components. Such claim language excludes use of components that would substantially change the nature of the adhesive claimed and excludes reactive hot melt adhesives.

Reversal of the examiner's rejection over Yang is requested.

B. Claims 2 and 22 are not obvious over Yang et al. in view of Milks.

Claims 2 and 22 are rejected under 35 U.S.C 103 (a) as being unpatentable over Yang et

al. (U.S. Patent No. 6,207,248) in view of Milks (U.S. Patent No. 5,401,791).

The disclosure of Milks fails to cure the defect of Yang by suggesting a hot melt adhesive, which is not a reactive hot melt, comprising an ethylene n-butyl acrylate copolymer, a modified terpene tackifier for use in bonding difficult to bond substrates such as UV varnish treated substrates, acrylic varnish treated substrates and fluorochemical treated substrates.

Reversal of the examiner's rejection over Yang in view of Milks is requested.

C. Claims 4, 5, 23 and 24 are not obvious over Yang et al. in view of Dupont et al.

Claims 4, 5, 23 and 24 are rejected under 35 U.S.C 103 (a) as being unpatentable over Yang et al. (U.S. Patent No. 6,207,248) in view of Dupont et al. (U.S. Patent No. 5,325,781).

The disclosure of Dupont fails to cure the defect of Yang by suggesting a hot melt adhesive, which is not a reactive hot melt, comprising an ethylene n-butyl acrylate copolymer, a modified terpene tackifier for use in bonding difficult to bond substrates such as UV varnish treated substrates, acrylic varnish treated substrates and fluorochemical treated substrates.

Reversal of the examiner's rejection over Yang in view of Dupont is requested.

D. Claims 6-8 and 25-27 are not obvious over Yang et al. in view of Howells.

Claims 6-8 and 25-27 are rejected under 35 U.S.C 103 (a) as being unpatentable over Yang et al. (U.S. Patent No. 6,207,248) in view of Howells (U.S. Patent No. 4,566,981).

The disclosure of Howells fails to cure the defect of Yang by suggesting a hot melt

adhesive, which is not a reactive hot melt, comprising an ethylene n-butyl acrylate copolymer, a modified terpene tackifier for use in bonding difficult to bond substrates such as UV varnish treated substrates, acrylic varnish treated substrates and fluorochemical treated substrates.

Reversal of the examiner's rejection over Yang in view of Howells is requested.

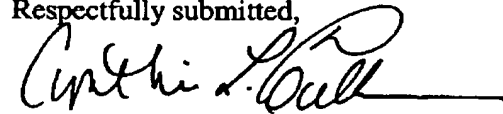
E. Claims 28-29 and 22 are not obvious over Yang et al. in view of Gruber et al.

Claims 28-29 and 22 are rejected under 35 U.S.C 103 (a) as being unpatentable over Yang et al. (U.S. Patent No. 6,207,248) in view of Gruber et al. (U.S. Patent No. 5,475,080).

The disclosure of Gruber fails to cure the defect of Yang by suggesting a hot melt adhesive, which is not a reactive hot melt, comprising an ethylene n-butyl acrylate copolymer, a modified terpene tackifier for use in bonding difficult to bond substrates such as UV varnish treated substrates, acrylic varnish treated substrates and fluorochemical treated substrates.

Reversal of the examiner's rejection over Yang in view of Gruber is requested.

Respectfully submitted,



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*Claim appendix*

1. An improved process for bonding difficult-to-bond substrates comprising bonding a first substrate to a second substrate with a thermoplastic hot melt adhesive composition, said composition comprising an ethylene n-butyl acrylate copolymer and a modified terpene tackifier.
2. The process of claim 1 wherein the modified terpene is a terpene phenolic.
3. The process of claim 1 further comprising a wax.
4. The process of claim 1 wherein the difficult-to-bond substrate is a UV varnish treated substrate or an acrylic varnish treated substrate.
5. The process of claim 4 wherein the substrate to be bonded is made of paper or paperboard.
6. The process of claim 1 wherein the substrate to be bonded is a grease resistance treated substrate.
7. The process of claim 6 wherein the substrate to be bonded is a fluorochemical treated substrate.

8. The process of claim 7 wherein the substrate is made of paper or paperboard.
21. An improved process for bonding difficult-to-bond substrates comprising bonding a first substrate to a second substrate with a hot melt adhesive composition, said composition consisting essentially of 30 to 45 % by weight ethylene n-butyl acrylate copolymer, 30 to 55 % by weight tackifier, and 20 to 40 % by weight wax, wherein the tackifier comprises at least one modified terpene tackifier.
22. The process of claim 21 wherein the modified terpene is a terpene phenolic.
23. The process of claim 21 wherein the difficult-to-bond substrate is a UV varnish treated substrate or an acrylic varnish treated substrate.
24. The process of claim 23 wherein the substrate to be bonded is made of paper or paperboard.
25. The process of claim 21 wherein the substrate to be bonded is a grease resistance treated substrate.
26. The process of claim 25 wherein the substrate to be bonded is a fluorochemical treated substrate.



27. The process of claim 26 wherein the substrate is made of paper or paperboard.
28. The process of claim 21 wherein said first and/or said second substrate has a surface energy of from about 35dyn/cm down to about 25dyn/cm.
29. The process of claim 1 wherein said first and/or said second substrate has a surface energy of from about 35dyn/cm down to about 25dyn/cm.
30. An improved process for bonding difficult-to-bond substrates comprising bonding a first substrate to a second substrate with a hot melt adhesive composition, said composition consisting essentially of an ethylene copolymer component, a tackifier component and wax component, wherein said ethylene copolymer comprises an ethylene n-butyl acrylate copolymer and said tackifier component comprises a modified terpene tackifier.
31. The process of claim 30 wherein the modified terpene is a terpene phenolic.
32. The process of claim 30 wherein the difficult-to-bond substrate is a UV varnish treated substrate, an acrylic varnish treated substrate or a fluorochemical treated substrate.

*Related Proceedings Appendix*

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